OBSERVATIONS & RECOMMENDATIONS

After reviewing data collected from **MIDDLE PEA PORRIDGE POND**, the program coordinators recommend the following actions.

FIGURE INTERPRETATION

- Figure 1: These graphs illustrate concentrations of chlorophyll-a in the water column. Algae are microscopic plants that are a natural part of lake ecosystems. Algae contain chlorophyll-a, a pigment necessary for photosynthesis. A measure of chlorophyll-a can indicate the abundance of algae in a lake. The historical data (the bottom graph) show a *fairly stable* in-lake chlorophyll-a trend. Chlorophyll concentrations have remained well below the NH mean reference line since Middle Pea Porridge Pond joined the VLAP program. While algae are present in all lakes, an excess amount of any type is not welcomed. Concentrations can increase when there are external and internal sources of phosphorus, which is the nutrient algae depend upon for growth. It's important to continue the education process and keep residents aware of the sources of phosphorus and how it influences lake quality.

- Figure 2: Water clarity is measured by using a Secchi disk. Clarity, or transparency, can be influenced by such things as algae, sediments from erosion, and natural colors of the water. The graphs on this page show historical and current year data. The lower graph shows a *fairly stable* trend in lake transparency since 1998. Transparency in the lake increased throughout the summer, and remains above the NH mean reference line. The 2000 sampling season was considered to be wet and, therefore, average transparency readings are expected to be slightly lower than last year's readings. Higher amounts of rainfall usually cause more eroding of sediments into the lake and streams, thus decreasing clarity.

- Figure 3: These figures show the amounts of phosphorus in the epilimnion (the upper layer in the lake) and the hypolimnion (the lower layer); the inset graphs show current year data. Phosphorus is the limiting nutrient for plants and algae in New Hampshire waters. Too much phosphorus in a lake can lead to increases in plant growth over time. These graphs show a *slightly worsening* trend in the upper water layer, and *slightly improving* trend in the lower water layer. This means concentrations have increased in the epilimnion and decreased in the hypolimnion. Phosphorus concentrations in the epilimnion were slightly elevated in June possibly, as a result of watershed runoff due to the increase in rain New Hampshire experienced early in the summer. August phosphorus concentrations in the hypolimnion were high as a result of the sample being contaminated with bottom sediment. Phosphorus bound to the sediment can raise the concentration of the sample. Mean phosphorus concentrations were below the NH median value again this season. One of the most important approaches to reducing phosphorus levels is educating the public. Humans introduce phosphorus to lakes by several means: fertilizing lawns, septic system failures, and detergents containing phosphates are just a few. Keeping the public aware of ways to reduce the input of phosphorus to lakes means less productivity in the lake. Contact the VLAP coordinator for tips on educating your lake residents or for ideas on testing your watershed for phosphorus inputs.

OTHER COMMENTS

- **Please note** in June this summer phosphorus levels were recorded as less than 5 µg/L in the metalimnion (middle water layer), hypolimnion (lower water layer), and the Inlet (Table 8). The NHDES Laboratory Services adopted a new method of analyzing total phosphorus this year and the lowest value that can be recorded is 'less than 5 µg/L'. We would like to remind the association that a reading of 5 µg/L is considered low for New Hampshire's waters.

- Dissolved oxygen was again high at all depths of the lake (Table 9). As stratified lakes age, oxygen is depleted in the lower layer by the process of decomposition. The lack of this aging indicator is a sign of the lake's overall health.

- *E. coli* originates in the intestines of warm-blooded animals (including humans) and is an indicator of associated and potentially harmful pathogens. Bacteria concentrations were all very low at the sites tested (Table 12). If residents are concerned about septic system impacts, testing when the water table is high or after rains is best. Please consult the Other Monitoring Parameters section of the report for the current standards for *E. coli* in surface waters.

- The turbidity of the hypolimnion sample was elevated in July and August this season (Table 11). This is responsible for the higher phosphorus concentrations in the hypolimnion versus the epilimnion. When sounding the bottom of the pond with the Kemmerer bottle to obtain the depth, sediment can be stirred up into the water column. The sediment, which has phosphorus bound to it, can then contaminate the hypolimnion sample and raise the phosphorus concentration. When sampling, either wait for the sediment to settle to the bottom, or try sampling from a different side of the boat than the side you obtained the bottom depth from.

After reviewing data collected from **BIG PEA PORRIDGE POND**, the program coordinators recommend the following actions.

FIGURE INTERPRETATION

- Figure 1: The historical data (the bottom graph) show a *stable* in-lake chlorophyll-a trend. Chlorophyll concentrations decreased as the summer progressed possibly as a response to the decrease in phosphorus concentrations in the upper water layer. Chlorophyll concentrations have remained well below the New Hampshire mean reference line and show no alarming signs of increasing lake productivity.

- Figure 2: The lower graph shows a *fairly stable* trend in lake transparency. Transparency in August was well above the New Hampshire mean reference line. Algal abundance was quite low and probably aided in the increase in water clarity at that time.

- Figure 3: These graphs show a *stable* trend for in-lake phosphorus levels. Phosphorus concentrations were well below the NH mean reference line, and remained fairly constant throughout the summer.

OTHER COMMENTS

- In June of 2000, the blue-green alga *Anabaena* was the second most abundant alga in the plankton sample (Table 2). Blue-green algae can reach nuisance levels when sufficient nutrients and favorable environmental conditions are present. While overall algal abundance continues to be low in the lake, the presence of these indicator species should serve as a reminder of the lake's delicate balance. Continued care to protect the watershed by limiting or eliminating fertilizer use on lawns, keeping the lake shoreline natural, and properly maintaining septic systems and roads will keep algae populations in balance.

- Conductivity in Big Rock Inlet has been increasing over the years. Conductivity increases often indicate the influence of human activities on surface waters. Septic system leachate, agricultural runoff, iron deposits, and road runoff can all influence conductivity. It would be useful to uncover the reasons for increased conductivity as we continue to monitor the lake. Also in August this season, conductivity, phosphorus, and turbidity were high for the inlet. The sample most likely contained organic debris, which can elevate phosphorus concentrations. Remember, if the water was stagnant results are most likely going to be high, therefore, we suggest only testing water that has sufficient flow for a clean sample. It may be worthwhile to collect additional samples along several sections of this Inlet to determine the source of the increased conductivity levels.

- **Please note** in June this summer phosphorus levels were found to be less than 5 µg/L in the metalimnion (middle water layer), Muddy Beach Inlet, and the Outlet (Table 8). The NHDES Laboratory Services adopted a new method of analyzing total phosphorus this year and the lowest value that can be recorded is less than 5 µg/L. If this caused an increase in the average phosphorus for either of the layers we would like to remind the association that a reading of 5 µg/L is still considered low for New Hampshire's waters.

- Dissolved oxygen was depleted in the last meter of the lake in June this season (Table 9). The process of decomposition in the sediments depletes dissolved oxygen on the bottom of thermally stratified lakes. As bacteria break down organic matter, they deplete oxygen in the water. When oxygen gets below 1 mg/L, phosphorus normally bound up in the mud may be released into the water column, a process that is referred to as *internal loading*. Depleted oxygen in the hypolimnion usually occurs as the summer progresses. This explains the higher phosphorus in the hypolimnion (lower water layer) versus the epilimnion (upper layer). We recommend scheduling your annual visit with the VLAP coordinator later in the season so we will be able to track the dissolved oxygen depletion in the pond. We also recommend increasing the hypolimnetic sampling depth to 11 meters, which is the depth that the dissolved oxygen is depleted. This will allow us to determine if there is an internal source of phosphorus. If this is the case, limiting or eliminating external phosphorus sources in the lake's watershed will be even more important for lake protection.

- *E. coli* concentrations were very low at all the sites tested (Table 12). If there are concerns about heavy beach use, we recommend testing when beach use is heavy. Because bacteria die quickly in cool pond waters (within 24 hours), testing is most accurate and most representative of health risk to bathers when the source (humans, or perhaps waterfowl) is present.

NOTES

- Monitor's Note (6/16/00): Leeches and tadpoles present.

USEFUL RESOURCES

What Can You Do To Prevent Soil Erosion?, WD-BB-30, NHDES Fact Sheet. (603) 271-3503 or www.state.nh.us

Save Our Streams Handbook for Wetlands Conservation and Sustainability. (800) BUG-IWLA, or visit www.iwla.org

Bacteria in Surface Waters, *WD-BB-14*, NHDES Fact Sheet, (603) 271-3503 or www.state.nh.us

2000

A Brief History of Lakes, NH Lakes Association pamphlet, (603) 226-0299 or www.nhlakes.org

Sand Dumping - Beach Construction, WD-BB-15, NHDES Fact Sheet, (603) 271-3503 or www.state.nh.us

Phosphorus in Lakes, WD-BB-20, NHDES Fact Sheet, (603) 271-3503 or www.state.nh.us

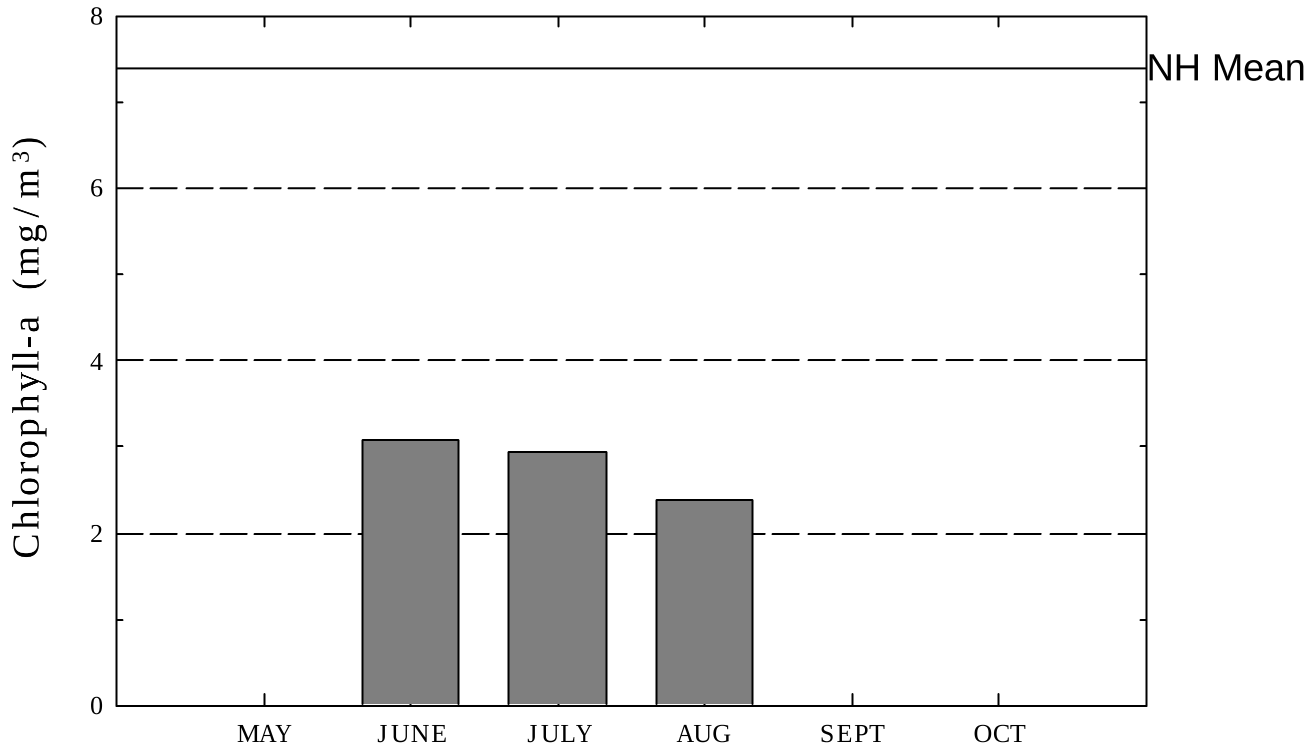
The Watershed Guide to Cleaner Rivers, Lakes, and Streams, Connecticut River Joint Commissions, 1995. (603) 826-4800

Road Salt and Water Quality, WD-WSQB-7, NHDES Fact Sheet, (603) 271-3503 or www.state.nh.us

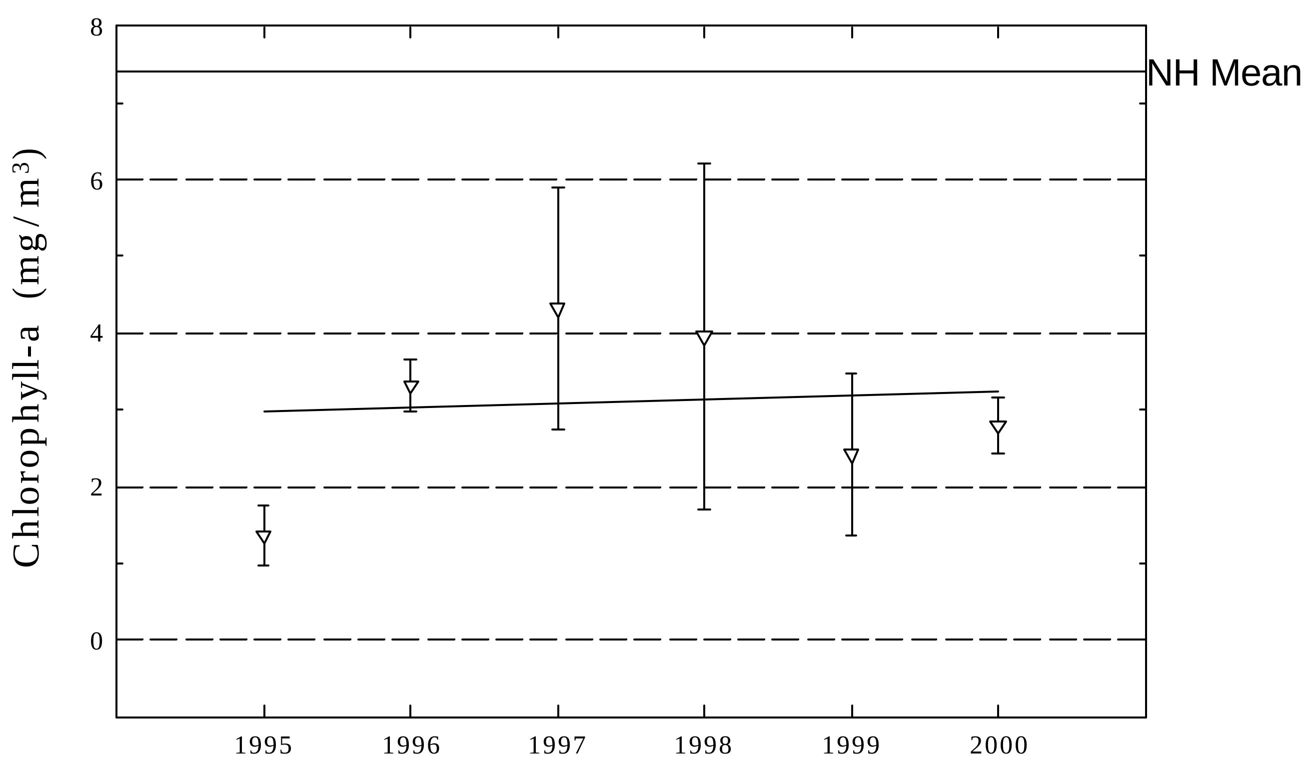
The Blue Green Algae. North American Lake Management Society, 1989. (608) 233-2836 or www.nalms.org

Pea Porridge Pond, Middle

Figure 1. Monthly and Historical Chlorophyll-a Results



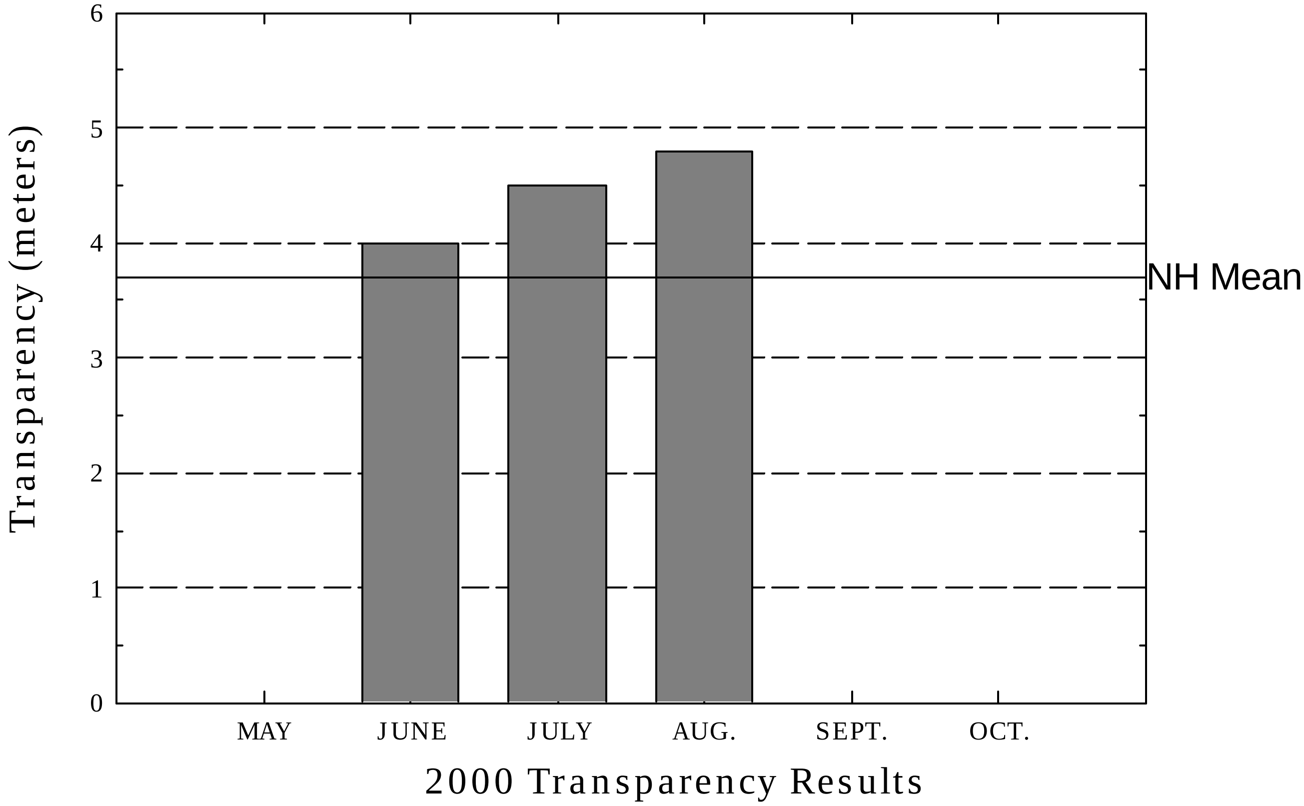
2000 Chlorophyll-a Results

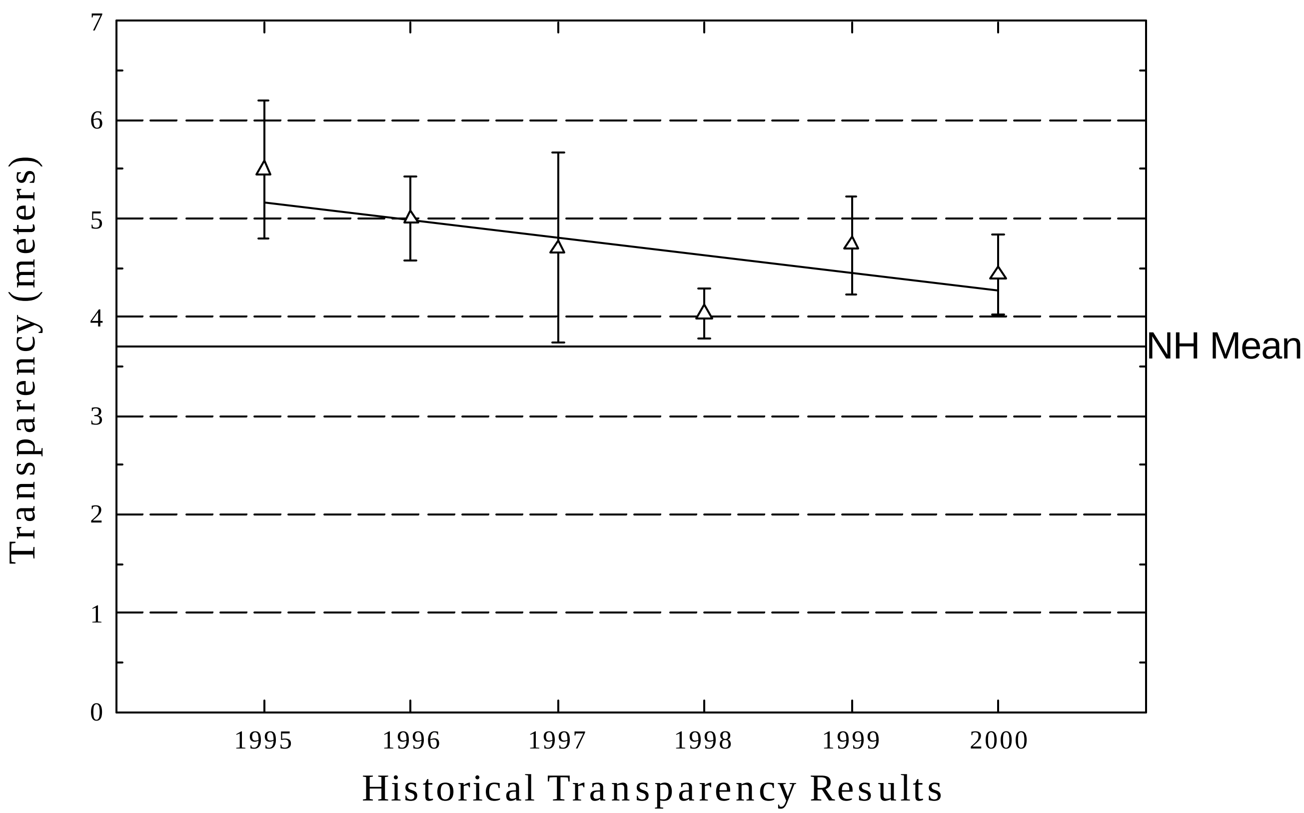


Historical Chlorophyll-a Results

Pea Porridge Pond, Middle

Figure 2. Monthly and Historical Transparency Results





Pea Porridge Pond, Middle

Figure 3. Monthly and Historical Total Phosphorus Data.

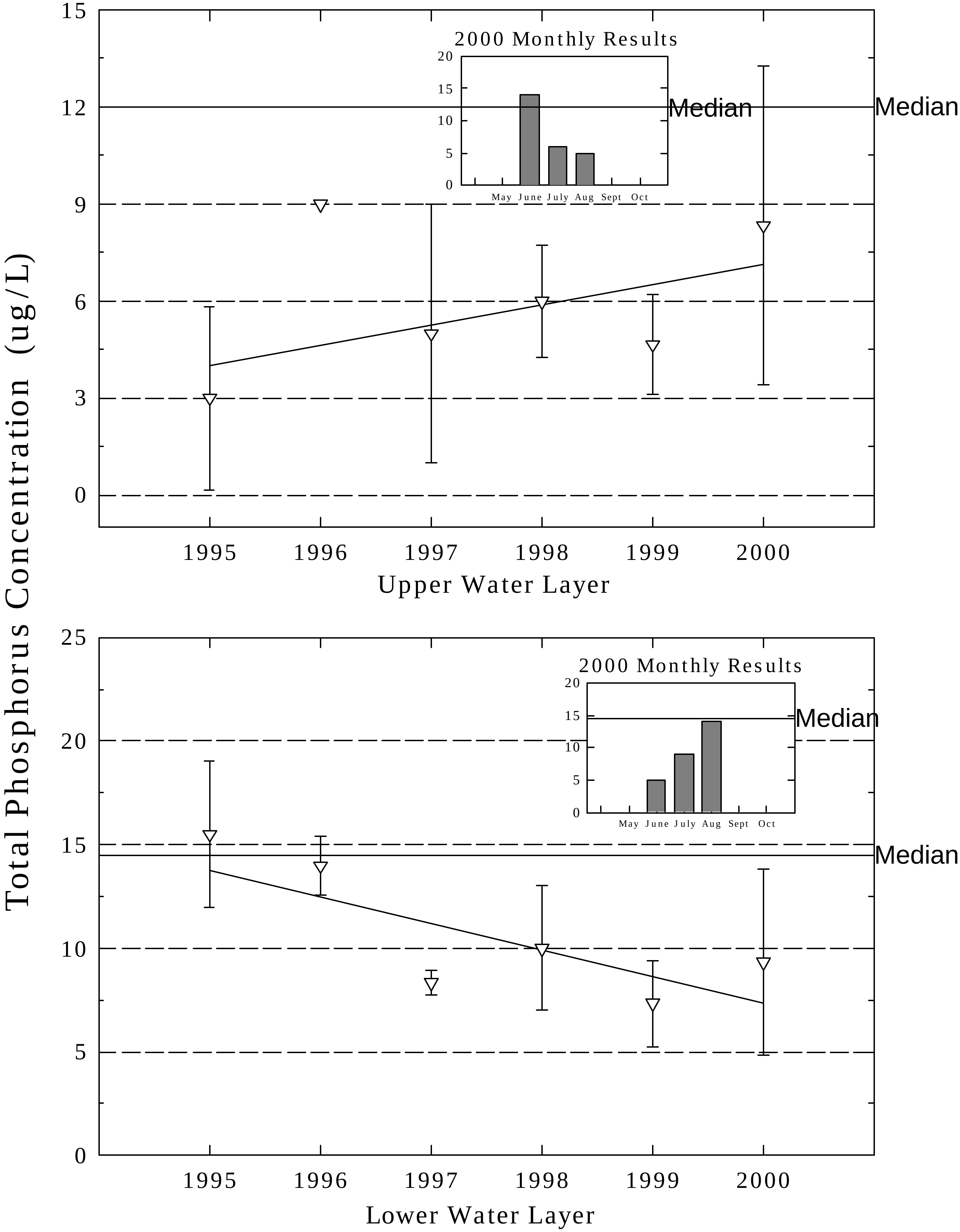


Table 1.

PEA PORRIDGE POND, MIDDLE MADISON

Chlorophyll-a results (mg/m^3) for current year and historical sampling periods.

Year	Minimum	Maximum	Mean
1995	1.09	1.64	1.36
1996	3.08	3.56	3.32
1997	2.73	5.88	4.32
1998	1.87	6.36	3.96
1999	1.80	3.65	2.42
2000	2.39	3.08	2.80

Table 2.

PEA PORRIDGE POND, MIDDLE

MADISON

Phytoplankton species and relative percent abundance.

Summary for current and historical sampling seasons.

Date of Sample	Species Observed	Relative % Abundance
07 / 07 / 1995	DINOBRYON	53
	ANABAENA	28
	CHRYSOSPHAERELLA	14
07 / 08 / 1996	CHRYSOSPHAERELLA	54
	DINOBRYON	37
	ASTERIONELLA	5
06 / 09 / 1997	DINOBRYON	48
	RHIZOSOLENIA	31
	UROGLENOPSIS	12
06 / 12 / 1998	DINOBRYON	52
	UROGLENOPSIS	13
	CHRYSOSPHAERELLA	13
06 / 28 / 1999	DINOBRYON	48
	ASTERIONELLA	33
	CERATIUM	8
06 / 16 / 2000	ASTERIONELLA	42
	DINOBRYON	38
	MALLOMONAS	8

Table 3.

PEA PORRIDGE POND, MIDDLE MADISON

Summary of current and historical Secchi Disk transparency results (in meters).

Year	Minimum	Maximum	Mean
1995	5.0	6.0	5.5
1996	4.7	5.3	5.0
1997	4.0	5.8	4.7
1998	3.8	4.3	4.0
1999	4.4	5.3	4.7
2000	4.0	4.8	4.4

Table 4.

PEA PORRIDGE POND, MIDDLE
MADISON

pH summary for current and historical sampling seasons.
Values in units, listed by station and year.

Station	Year	Minimum	Maximum	Mean
EPILIMNION				
	1995	6.68	6.76	6.72
	1996	6.41	6.62	6.50
	1997	6.64	6.83	6.71
	1998	6.52	6.67	6.61
	1999	6.21	6.59	6.40
	2000	6.40	6.66	6.54
HYPOLIMNION				
	1995	5.94	5.97	5.95
	1996	5.84	6.01	5.92
	1997	6.02	6.27	6.12
	1998	5.89	5.95	5.91
	1999	6.06	6.34	6.21
	2000	6.01	6.53	6.15
INLET				
	1995	6.11	6.45	6.25
	1996	6.07	6.29	6.17
	1997	6.31	6.57	6.38
	1998	6.20	6.42	6.28
	1999	6.16	6.16	6.16
	2000	6.37	6.49	6.44
METALIMNION				
	1995	6.62	6.67	6.64
	1996	6.10	6.34	6.20

Table 4.

PEA PORRIDGE POND, MIDDLE
MADISON

pH summary for current and historical sampling seasons.
Values in units, listed by station and year.

Station	Year	Minimum	Maximum	Mean
	1997	6.69	6.77	6.72
	1998	6.14	6.59	6.34
	1999	6.35	6.44	6.39
	2000	6.26	6.52	6.36
OUTLET				
	1995	6.40	6.70	6.52
	1996	6.37	6.41	6.39
	1997	6.46	6.82	6.60
	1998	6.41	6.51	6.46
	1999	6.37	6.46	6.42
	2000	6.45	6.55	6.51

Table 5.

PEA PORRIDGE POND, MIDDLE

MADISON

Summary of current and historical Acid Neutralizing Capacity.
Values expressed in mg/L as CaCO .

Epilimnetic Values

Year	**Minimum**	**Maximum**	**Mean**
1995	4.30	4.50	4.40
1996	3.90	4.00	3.95
1997	3.70	4.50	4.07
1998	3.50	3.70	3.60
1999	3.50	3.90	3.73
2000	3.40	3.80	3.60

Table 6.

PEA PORRIDGE POND, MIDDLE MADISON

Specific conductance results from current and historic sampling seasons. Results in uMhos/cm.

Station	Year	Minimum	Maximum	Mean
EPILIMNION				
	1995	43.2	44.2	43.7
	1996	42.2	44.3	43.2
	1997	42.8	44.0	43.4
	1998	45.2	48.3	46.7
	1999	52.9	55.0	54.1
	2000	50.0	51.3	50.8
HYPOLIMNION				
	1995	40.6	42.2	41.4
	1996	46.7	50.4	48.5
	1997	46.3	47.3	46.9
	1998	55.8	57.9	56.5
	1999	49.7	50.2	49.9
	2000	51.1	55.4	53.1
INLET				
	1995	36.5	41.0	38.7
	1996	38.3	44.6	41.4
	1997	36.4	40.8	38.1
	1998	40.6	45.1	42.5
	1999	46.5	46.5	46.5
	2000	43.5	45.8	44.4
METALIMNION				
	1995	39.8	43.6	41.7
	1996	41.5	42.9	42.2
	1997	40.8	43.9	42.8

Table 6.

PEA PORRIDGE POND, MIDDLE
MADISON

Specific conductance results from current and historic sampling seasons. Results in uMhos/cm.

Station	Year	Minimum	Maximum	Mean
	1998	45.8	47.6	46.5
	1999	50.4	53.0	51.8
	2000	48.1	51.5	49.5
OUTLET				
	1995	47.5	49.3	48.4
	1996	49.5	55.5	52.5
	1997	44.1	48.1	46.0
	1998	53.1	62.2	58.7
	1999	54.5	59.4	57.5
	2000	52.6	57.2	54.4

Table 8.

PEA PORRIDGE POND, MIDDLE MADISON

Summary historical and current sampling season Total Phosphorus data. Results in ug/L.

Station	Year	Minimum	Maximum	Mean
EPILIMNION				
	1995	1	5	3
	1996	9	9	9
	1997	1	9	5
	1998	4	7	6
	1999	3	6	4
	2000	< 5	14	8
HYPOLIMNION				
	1995	13	18	15
	1996	13	15	14
	1997	8	9	8
	1998	7	13	10
	1999	5	9	7
	2000	< 5	14	9
INLET				
	1995	7	34	20
	1996	9	11	10
	1997	7	8	7
	1998	10	11	10
	1999	10	10	10
	2000	< 5	7	5
METALIMNION				
	1995	4	6	5
	1996	7	8	7
	1997	2	10	6

Table 8.

PEA PORRIDGE POND, MIDDLE
MADISON

Summary historical and current sampling season Total Phosphorus data. Results in ug/L.

Station	Year	Minimum	Maximum	Mean
	1998	5	7	6
	1999	2	7	4
	2000	< 5	9	6
OUTLET				
	1995	5	7	6
	1996	7	7	7
	1997	4	7	5
	1998	4	7	5
	1999	4	7	5
	2000	< 5	10	6

Table 9.

PEA PORRIDGE POND, MIDDL
MADISON

Current year dissolved oxygen and temperature data.

Depth (meters)	Temperature (celsius)	Dissolved Oxygen (mg/L)	Saturation (%)
June 16, 2000			
0.1	18.4	9.2	98.4
1.0	18.4	9.2	97.9
2.0	18.1	9.2	97.5
3.0	18.0	9.2	96.7
4.0	17.3	9.1	95.1
5.0	12.4	8.8	82.3
6.0	10.7	8.5	76.2
7.0	9.7	7.8	68.4
8.0	9.3	7.4	64.1
9.0	8.9	7.0	60.0
10.0	8.6	6.4	54.4
11.0	8.4	5.2	44.3
11.5	8.3	4.9	41.7

Table 10.

PEA PORRIDGE POND, MIDDL

MADISON

Historic Hypolimnetic dissolved oxygen and temperature data.

Date	Depth (meters)	Temperature (celsius)	Dissolved Oxygen (mg/L)	Saturation (%)
June 16, 2000	11.5	8.3	4.9	41.7

Table 11.

PEA PORRIDGE POND, MIDDLE
MADISON

Summary of current year and historic turbidity sampling.
Results in NTU's.

Station	Year	Minimum	Maximum	Mean
EPILIMNION				
	1997	0.2	0.4	0.3
	1998	0.2	0.7	0.4
	1999	0.3	0.5	0.4
	2000	0.2	0.5	0.3
HYPOLIMNION				
	1997	0.3	0.8	0.5
	1998	0.6	2.0	1.1
	1999	0.4	0.7	0.5
	2000	0.4	4.8	2.3
INLET				
	1997	0.3	0.6	0.4
	1998	0.6	1.4	1.0
	1999	6.0	6.0	6.0
	2000	0.4	0.5	0.4
METALIMNION				
	1997	0.2	0.3	0.3
	1998	0.5	1.0	0.8
	1999	0.4	0.8	0.6
	2000	0.3	0.5	0.4
OUTLET				
	1997	0.2	0.4	0.3
	1998	0.3	0.7	0.5
	1999	0.5	0.8	0.6
	2000	0.3	0.8	0.4

Table 12.

PEA PORRIDGE POND,

MADISON

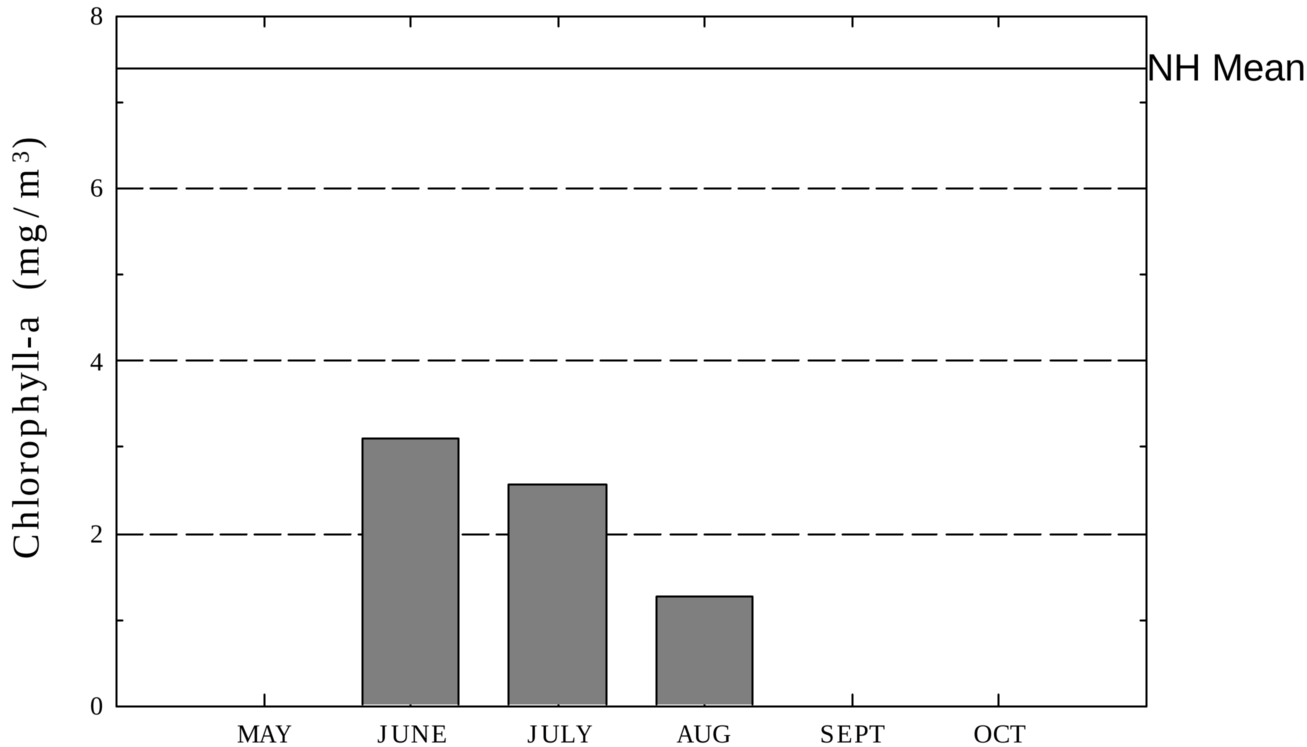
Summary of current year bacteria sampling.
Results in counts per 100ml.

Location	Date	E. Coli See Note Below
A FRAME BEACH		
	July 30	2
	August 27	1
MIDDLE BEACH		
	July 30	2
	August 27	0
PAYNE BEACH		
	July 30	1
	August 27	1

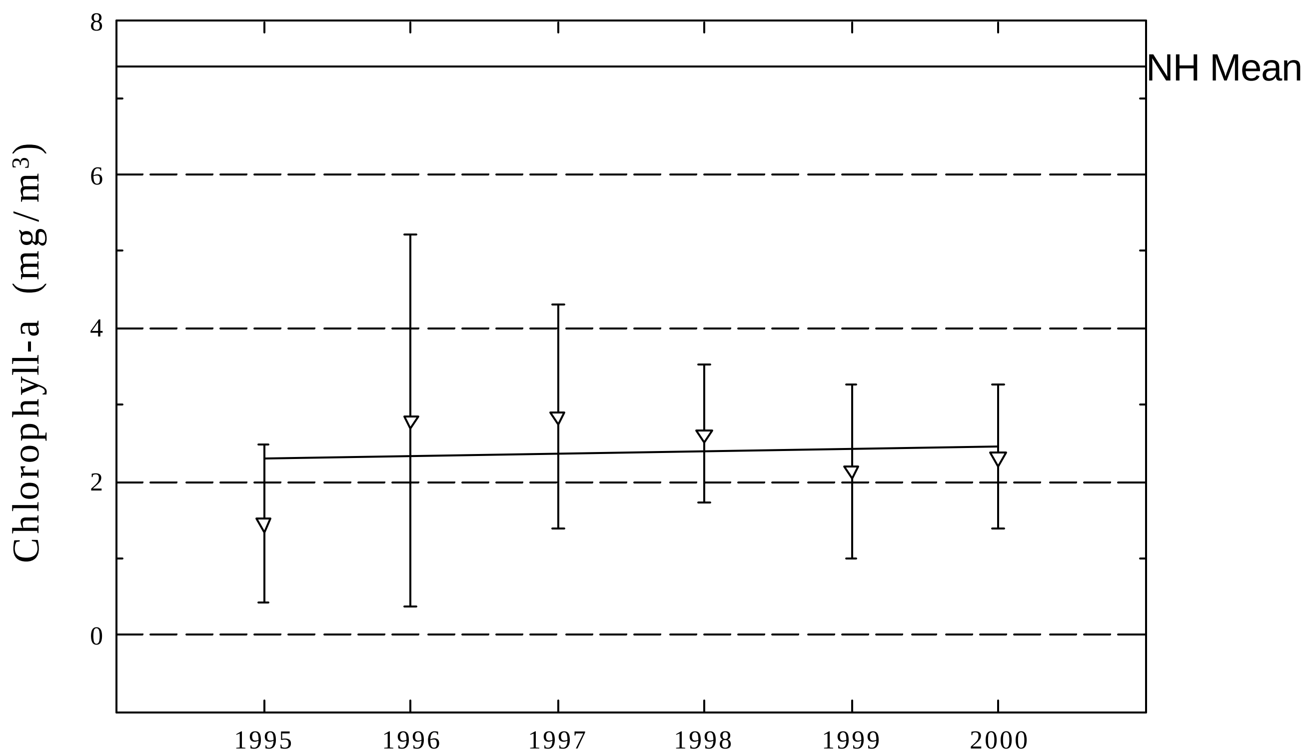
NOTE: "<" means "less than" and ">" means "greater than"

Pea Porridge Pond, Big

Figure 1. Monthly and Historical Chlorophyll-a Results



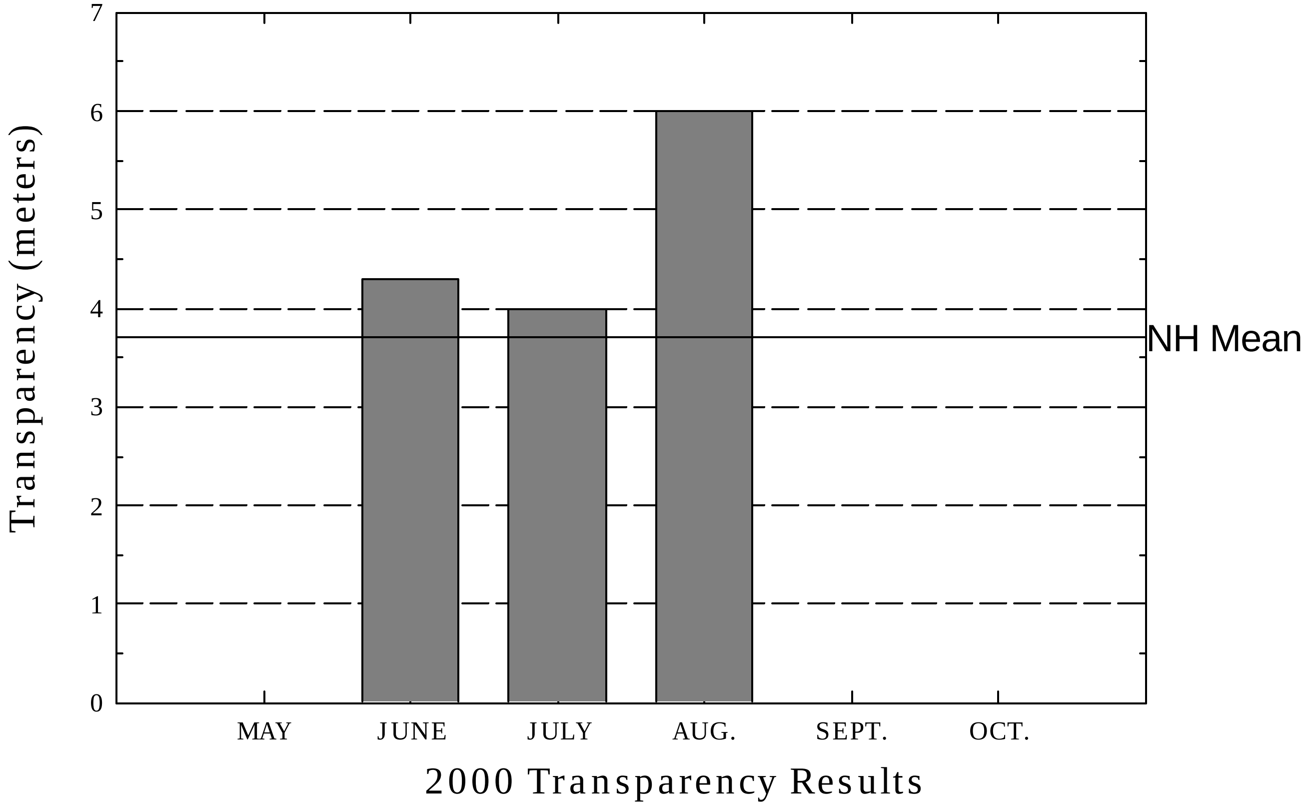
2000 Chlorophyll-a Results

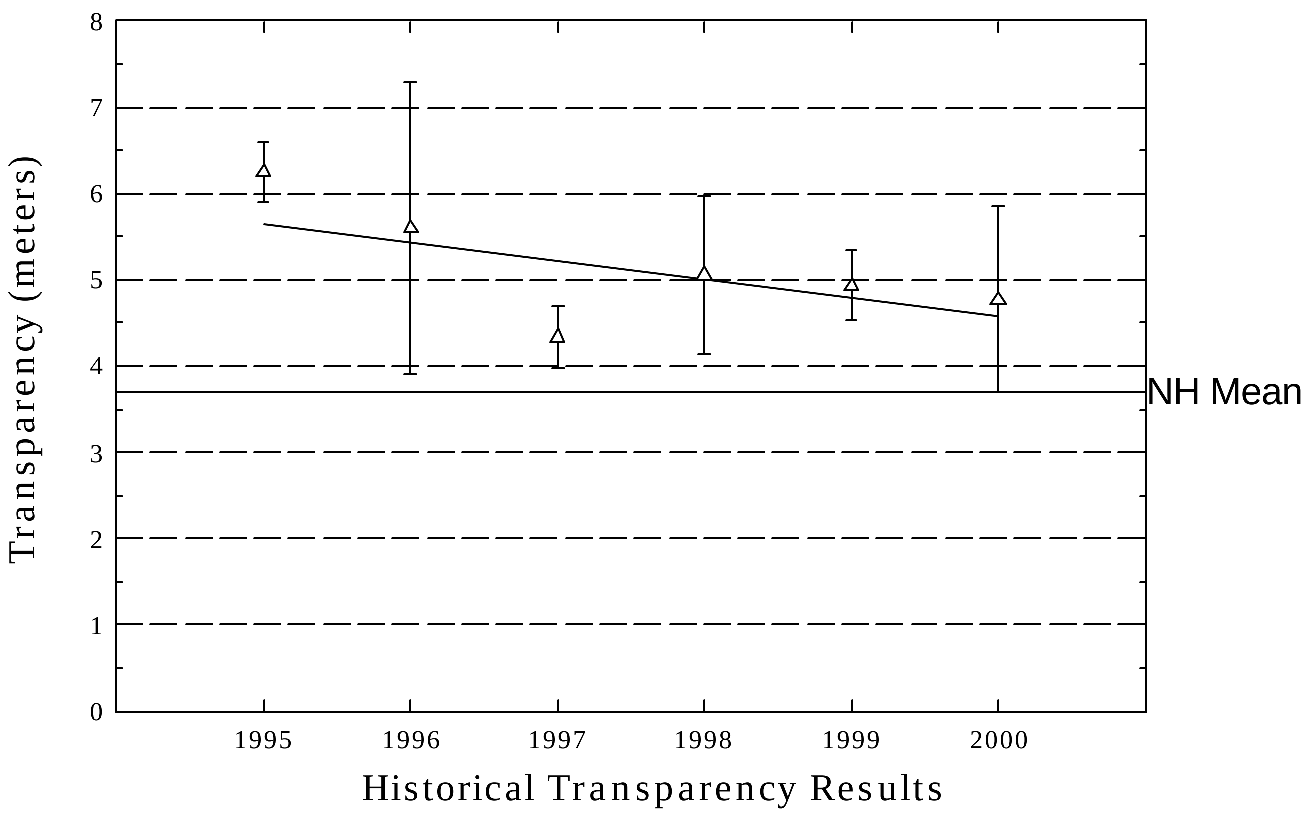


Historical Chlorophyll-a Results

Pea Porridge Pond, Big

Figure 2. Monthly and Historical Transparency Results





Pea Porridge Pond, Big

Figure 3. Monthly and Historical Total Phosphorus Data.

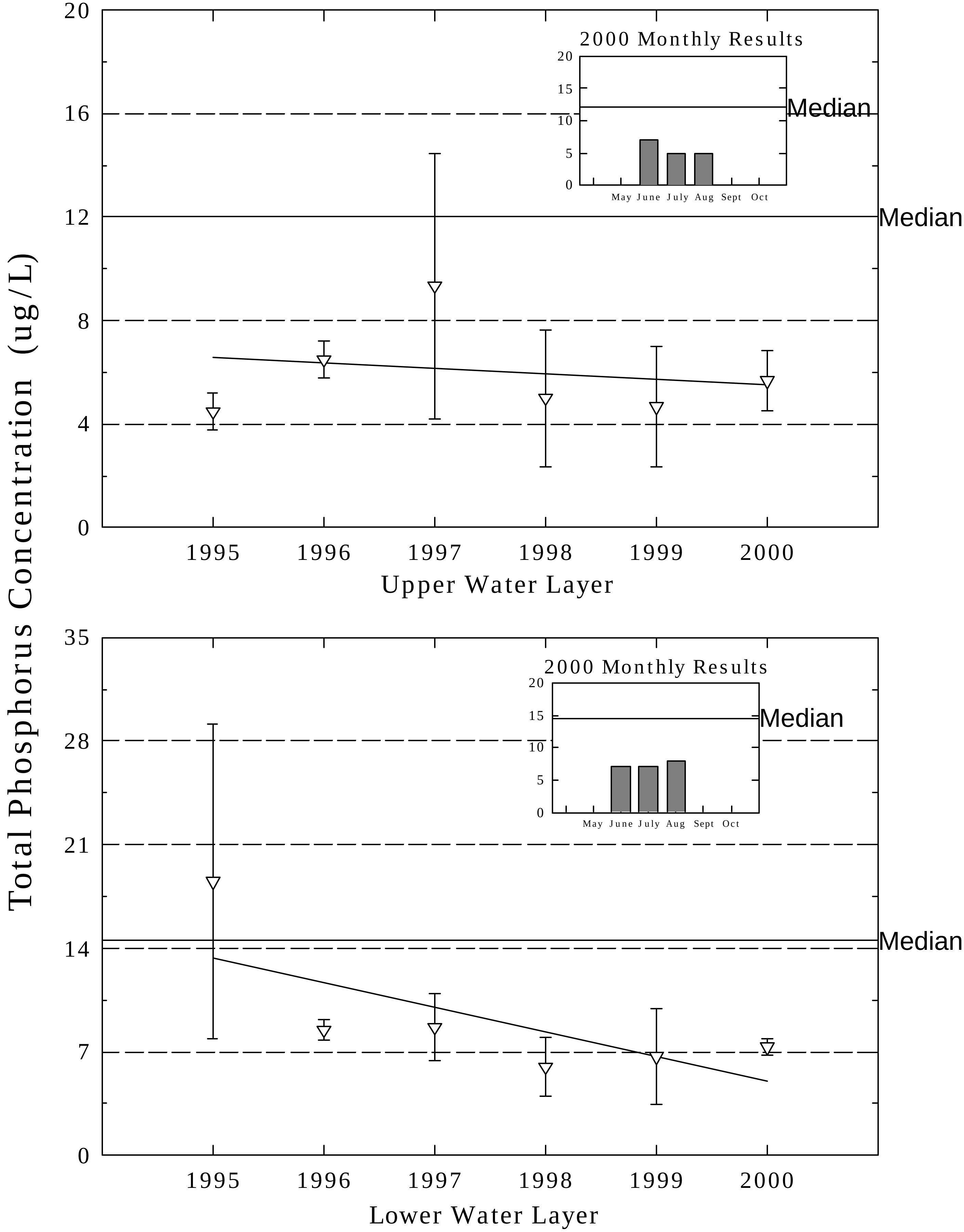


Table 1.

PEA PORRIDGE POND, BIG MADISON

Chlorophyll-a results (mg/m^3) for current year and historical sampling periods.

Year	Minimum	Maximum	Mean
1995	0.73	2.18	1.45
1996	1.07	4.51	2.79
1997	1.45	4.36	2.85
1998	1.66	3.45	2.62
1999	0.90	3.13	2.14
2000	1.28	3.11	2.31

Table 2.

PEA PORRIDGE POND, BIG MADISON

Phytoplankton species and relative percent abundance.

Summary for current and historical sampling seasons.

Date of Sample	Species Observed	Relative % Abundance
07 / 07 / 1995	CHRYSOSPHAERELLA	69
	RHIZOSOLENIA	9
	STAURASTRUM	
07 / 08 / 1996	CHRYSOSPHAERELLA	69
	RHIZOSOLENIA	20
	DINOBRYON	15
06 / 09 / 1997	DINOBRYON	53
	RHIZOSOLENIA	30
	ASTERIONELLA	5
06 / 12 / 1998	UROGLENOPSIS	70
	DINOBRYON	15
	ANABAENA	10
06 / 28 / 1999	DINOBRYON	72
	CERATIUM	10
	ASTERIONELLA	7
06 / 16 / 2000	DINOBRYON	50
	ANABAENA	26
	ASTERIONELLA	19

Table 3.

PEA PORRIDGE POND, BIG MADISON

Summary of current and historical Secchi Disk transparency results (in meters).

Year	Minimum	Maximum	Mean
1995	6.0	6.5	6.2
1996	4.4	6.8	5.6
1997	4.0	4.7	4.3
1998	4.4	5.7	5.0
1999	4.5	5.3	4.9
2000	4.0	6.0	4.7

Table 4.

PEA PORRIDGE POND, BIG MADISON

pH summary for current and historical sampling seasons.
Values in units, listed by station and year.

Station	Year	Minimum	Maximum	Mean
BIG ROCK INLET				
	1995	6.13	6.15	6.14
	1996	6.16	6.16	6.16
	1997	6.08	6.68	6.32
	1998	6.08	6.16	6.12
	1999	5.98	6.22	6.10
	2000	6.10	6.19	6.16
EPILIMNION				
	1995	6.53	6.91	6.68
	1996	6.17	6.52	6.31
	1997	6.48	6.70	6.61
	1998	6.53	6.77	6.62
	1999	6.56	6.57	6.56
	2000	6.14	6.77	6.42
HYPOLIMNION				
	1995	5.95	6.07	6.01
	1996	5.86	6.32	6.03
	1997	6.11	6.56	6.28
	1998	5.78	6.16	5.89
	1999	5.95	6.45	6.21
	2000	5.90	6.62	6.09
INLET				
	1996	6.20	6.20	6.20

Table 4.

PEA PORRIDGE POND, BIG MADISON

pH summary for current and historical sampling seasons. Values in units, listed by station and year.

Station	Year	Minimum	Maximum	Mean
METALIMNION				
	1995	6.35	6.80	6.52
	1996	6.08	6.22	6.14
	1997	6.52	6.78	6.63
	1998	6.10	6.51	6.31
	1999	6.36	6.54	6.43
	2000	6.38	6.62	6.50
MUDDY BEACH INLET				
	1995	6.00	6.11	6.05
	1996	6.13	6.13	6.13
	1997	5.85	6.57	6.16
	1998	6.15	6.20	6.17
	1999	6.08	6.22	6.15
	2000	6.30	6.34	6.32
OUTLET				
	1995	6.43	6.64	6.52
	1996	6.39	6.42	6.40
	1997	6.66	6.79	6.71
	1998	6.49	6.66	6.56
	1999	6.47	6.47	6.47
	2000	6.55	6.64	6.60

Table 5.

PEA PORRIDGE POND, BIG MADISON

Summary of current and historical Acid Neutralizing Capacity. Values expressed in mg/L as CaCO .

Epilimnetic Values

Year	Minimum	Maximum	Mean
1995	3.60	3.80	3.70
1996	3.00	3.40	3.20
1997	2.40	3.10	2.77
1998	2.90	3.70	3.23
1999	3.00	3.30	3.15
2000	2.80	3.40	3.20

Table 6.

PEA PORRIDGE POND, BIG MADISON

Specific conductance results from current and historic sampling seasons. Results in uMhos/cm.

Station	Year	Minimum	Maximum	Mean
BIG ROCK INLET				
	1995	37.6	38.5	38.0
	1996	43.1	43.1	43.1
	1997	40.9	83.0	55.9
	1998	77.4	94.2	87.6
	1999	99.2	105.5	102.7
	2000	74.1	106.1	87.0
EPILIMNION				
	1995	35.2	35.8	35.5
	1996	36.9	37.4	37.1
	1997	35.9	36.6	36.2
	1998	38.2	40.7	39.2
	1999	45.3	45.7	45.5
	2000	42.4	44.2	43.5
HYPOLIMNION				
	1995	33.7	36.5	35.1
	1996	37.1	40.2	38.6
	1997	34.7	36.8	35.6
	1998	38.8	40.5	39.4
	1999	41.8	44.6	43.1
	2000	43.5	45.7	44.2
INLET				
	1996	49.7	49.7	49.7

Table 6.

PEA PORRIDGE POND, BIG MADISON

Specific conductance results from current and historic sampling seasons. Results in uMhos/cm.

Station	Year	Minimum	Maximum	Mean
METALIMNION				
	1995	33.2	35.1	34.1
	1996	36.0	37.2	36.6
	1997	36.0	36.5	36.2
	1998	35.8	40.7	38.5
	1999	43.3	45.0	44.3
	2000	43.4	44.5	43.8
MUDDY BEACH INLET				
	1995	35.4	38.7	37.0
	1996	36.8	36.8	36.8
	1997	31.7	42.0	36.4
	1998	30.3	33.1	32.0
	1999	34.5	46.9	41.1
	2000	25.5	33.0	28.5
OUTLET				
	1995	35.6	35.7	35.6
	1996	37.0	37.2	37.1
	1997	36.1	36.7	36.3
	1998	38.2	39.8	39.0
	1999	44.2	44.2	44.2
	2000	43.4	44.3	43.8

Table 8.

PEA PORRIDGE POND, BIG MADISON

Summary historical and current sampling season Total Phosphorus data. Results in ug/L.

Station	Year	Minimum	Maximum	Mean
BIG ROCK INLET				
	1995	21	157	89
	1996	9	9	9
	1997	12	16	14
	1998	7	9	8
	1999	6	22	14
	2000	6	18	10
EPILIMNION				
	1995	4	5	4
	1996	6	7	6
	1997	5	15	9
	1998	3	8	5
	1999	2	6	4
	2000	< 5	7	5
HYPOLIMNION				
	1995	11	26	18
	1996	8	9	8
	1997	6	10	8
	1998	4	8	6
	1999	3	9	6
	2000	7	8	7
METALIMNION				
	1995	3	6	4
	1996	5	8	6
	1997	6	9	7

Table 8.

PEA PORRIDGE POND, BIG
MADISON

Summary historical and current sampling season Total Phosphorus data. Results in ug/L.

Station	Year	Minimum	Maximum	Mean
	1998	3	6	4
	1999	1	7	4
	2000	< 5	6	5
MUDDY BEACH INLET				
	1995	6	8	7
	1996	9	9	9
	1997	6	13	9
	1998	9	15	13
	1999	15	43	30
	2000	< 5	11	8
OUTLET				
	1995	2	4	3
	1996	8	8	8
	1997	4	4	4
	1998	4	7	5
	1999	3	3	3
	2000	< 5	5	5

Table 9.

PEA PORRIDGE POND, BIG MADISON

Current year dissolved oxygen and temperature data.

Depth (meters)	Temperature (celsius)	Dissolved Oxygen (mg/L)	Saturation (%)
June 16, 2000			
0.1	18.5	9.6	101.9
1.0	18.3	9.5	101.0
2.0	17.5	9.5	99.2
3.0	17.1	9.4	97.9
4.0	13.5	11.8	113.2
5.0	10.6	11.5	103.6
6.0	8.6	10.2	87.5
7.0	7.4	8.7	72.5
8.0	6.7	6.3	51.9
9.0	6.4	5.2	42.1
10.0	6.2	4.1	33.4
11.0	6.9	0.9	7.6
11.5	8.0	1.5	12.5

Table 10.

PEA PORRIDGE POND, BIG MADISON

Historic Hypolimnetic dissolved oxygen and temperature data.

Date	Depth (meters)	Temperature (celsius)	Dissolved Oxygen (mg/L)	Saturation (%)
July 7, 1995	12.0	9.0	2.5	21.0
July 8, 1996	12.0	8.2	3.4	28.0
June 9, 1997	11.0	10.9	5.5	48.0
June 12, 1998	11.0	8.0	6.6	50.0
June 28, 1999	11.0	8.8	5.5	47.4
June 16, 2000	11.5	8.0	1.5	12.5

Table 11.

PEA PORRIDGE POND, BIG MADISON

Summary of current year and historic turbidity sampling. Results in NTU's.

Station	Year	Minimum	Maximum	Mean
BIG ROCK INLET				
	1997	0.5	0.6	0.5
	1998	0.3	1.5	0.8
	1999	0.6	8.0	3.9
	2000	0.4	2.7	1.3
EPILIMNION				
	1997	0.2	0.4	0.3
	1998	0.3	0.5	0.4
	1999	0.3	0.6	0.5
	2000	0.3	0.3	0.3
HYPOLIMNION				
	1997	0.2	0.6	0.4
	1998	0.3	1.3	0.7
	1999	0.3	0.9	0.6
	2000	0.4	1.3	0.8
METALIMNION				
	1997	0.3	0.4	0.3
	1998	0.3	0.8	0.5
	1999	0.4	0.6	0.5
	2000	0.2	0.5	0.3
MUDDY BEACH INLET				
	1997	0.3	0.5	0.4
	1998	0.9	4.0	2.3
	1999	1.2	4.7	3.4
	2000	0.4	1.5	0.8
OUTLET				

Table 11.

PEA PORRIDGE POND, BIG MADISON

Summary of current year and historic turbidity sampling. Results in NTU's.

Station	Year	Minimum	Maximum	Mean
OUTLET				
	1997	0.2	0.2	0.2
	1998	0.2	0.5	0.3
	1999	0.5	0.5	0.5
	2000	0.2	0.6	0.4

Table 12.

PEA PORRIDGE POND, BIG MADISON

**Summary of current year bacteria sampling.
Results in counts per 100ml.**

Location	Date	E. Coli See Note Below
LOG CABIN		
	July 30	0
THOSIS BEACH		
	July 30	0
	August 27	0
VENDOLA BEACH		
	July 30	1
	August 27	1

NOTE: "<" means "less than" and ">" means "greater than"